



Tikrit University
College of Veterinary Medicine

Lecture Title: GENERAL PATHOLOGICAL CONDITIONS

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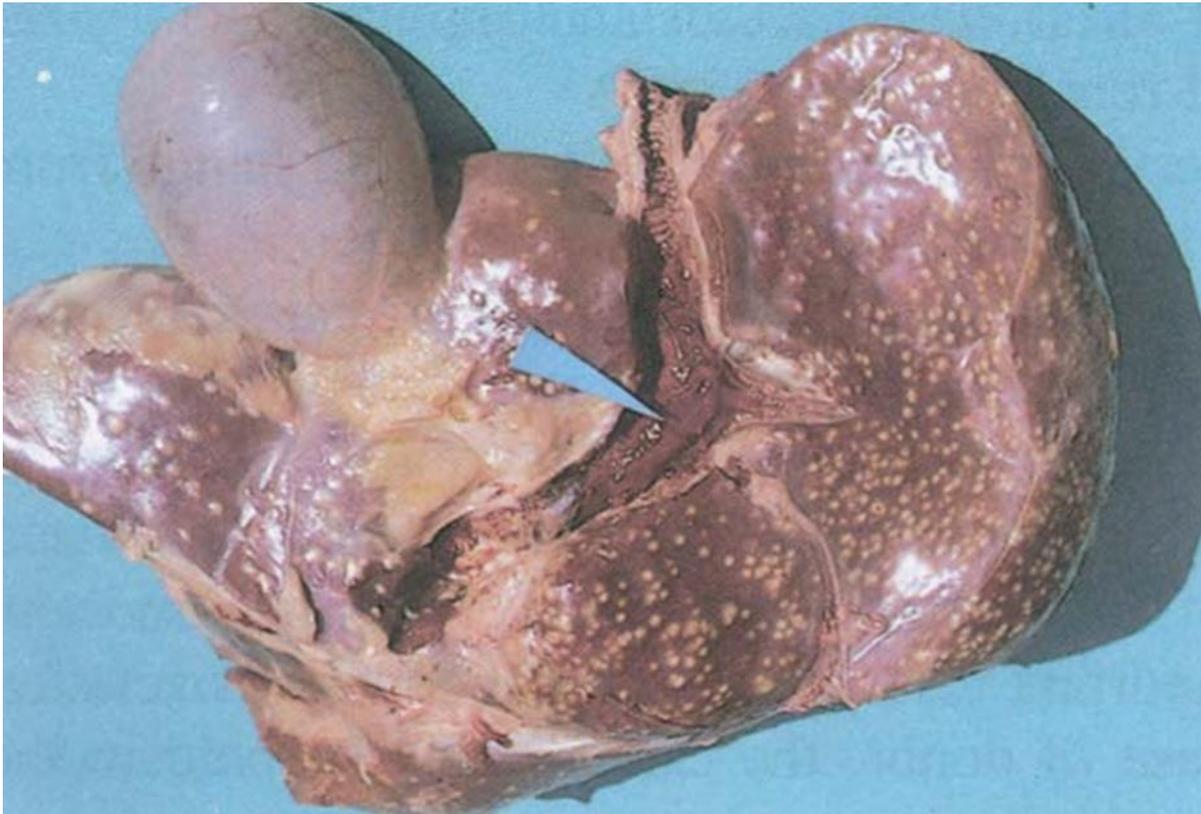
*GENERAL PATHOLOGICAL
CONDITIONS*

Abscess

- An abscess is a localized collection of pus separated from the surrounding tissue by a fibrous capsule.
- The most common bacteria in liver abscesses include *Corynebacterium pyogenes*, *Streptococcus* spp. and *Staphylococcus* spp. In the lungs the most common bacteria are *Pasteurella* spp. and *Corynebacterium pyogenes*.
- **Judgement** : Inspectors should differentiate the abscesses in the active and growing state from the older calcified or healed abscesses. The judgement of animals and carcasses affected with abscesses depends on findings of primary or secondary abscesses in the animal. The portal of entry of pyogenic organisms into the system is also of importance. The primary abscess is usually situated in tissue which has contact with the digestive tract, respiratory tract, subcutaneous tissue etc. The secondary abscess is found in tissue where contact with these body systems and organs is via the blood stream. The brain, bone marrow, spinal cord, renal cortex, ovary and spleen may be affected with secondary abscesses. In judgement of the carcass, A single huge abscess found in one of the sites of secondary abscesses may cause the condemnation of a carcass if toxæmia is present.

- The animals affected with abscesses spread through the blood stream (pyemia) are *condemned* on antemortem if the findings of abscesses are over most areas of the body and systemic involvement is evident as shown in elevated temperature and cachexia.
- On postmortem examination, the carcasses are *condemned* for abscesses, if the abscesses resulted from entry of pyogenic organisms into the blood stream and into the abdominal organs, spine or musculature. An abscess in the lungs may require *condemnation* of the lungs and an *passing* the carcass if no other lesions are noted.

MULTIPLE ABSCESES IN THE CALF LIVER AS A RESULT OF AN UMBILICAL INFECTION; CARCASS WITH SUCH CONDITION SHOULD BE CONDEMNED.



Pulmonary Emphysema

- Emphysema in animals is associated with some disease conditions and is caused by an obstruction to the outflow of air or by extensive gasping respiration during slaughter procedures. There are 2 types of emphysema alveolar and interstitial emphysema.
- All species may be affected with alveolar emphysema. However interstitial emphysema occurs mostly in cattle. In the latter, the lack of collateral ventilation forces the rupture of alveoli and the migration of air into the interstitium. The lobules of the lungs become separated by the distended interstitial tissue and marked lobulation of lungs is observed.
- Alveolar emphysema appears as small air bubbles due to air trapped in dilated alveoli.
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- Interstitial emphysema occurs due to rupture of alveoli and the migration of air into the interstitium.
- **Postmortem findings:** Postmortem findings of the emphysematous lungs include a pale, enlarged greyish-yellow, pearl like shiny lesion. Upon palpation, the affected area feels puffy and crepitant.
- Two diseases of food animals associated with emphysema are *chronic obstructive pulmonary disease* (COPD) in horses, and *interstitial pneumonia* in cattle. COPD is also called heaves and frequently described under chronic bronchitis or bronchiolitis in horses. Interstitial pneumonia in cattle is also described under fog fever (acute bovine pulmonary edema and emphysema or bovine atypical interstitial pneumonia and cow asthma) .
- **Judgement:** Affected lungs are *condemned*.

INTERSTITIAL EMPHYSEMA IN THE COW'S LUNGS.



Calcification

- Calcification is divided into **dystrophic calcification** and **Metastatic Calcification**. **dystrophic calcification** is the deposition of calcium salts in dead and degenerating tissue. It may be regarded as a body reaction to immobilize some foreign agents. It may occur in any tissue or organ it is also seen in *parasitic infection*. **Metastatic Calcification** is noted in In dairy cows, calcification is noted in the heart (*endocardium*) and is caused by excessive dietary supplementation with Vitamin D. If calcium particles are removed from the surrounding tissue, they appear white or grey, irregularly rounded and frequently honeycombed. Calcification is detected on postmortem examination by a gritty sound upon incision with a knife.
- **Judgement:** Carcass and viscera affected with calcification are *approved*, Affected tissue is *condemned*. Calcified parasitic organs and heart in dairy cows are also *condemned*.

CALCIFICATION OF THE AORTA AND BRACHIOCEPHALIC TRUNK IN A YOUNG HEIFER



Degeneration

- Degeneration implies the change of tissue to a lower or less functionally active form or deterioration (impairment) of an organ or cell due to changes in its size. If chemical change of the tissue occur this is regarded as a true degeneration. Cloudy swelling in the cell is a response to cell insults including trauma, anoxia, immune mechanisms, toxins, viral, and bacterial agents. In *cloudy swelling*, cell substances become cloudy and the cell increases in size. It is observed in the *heart, kidneys, liver, glands* and *muscles*. Affected organs are pale, softer than normal, slightly enlarged and have the appearance of having been boiled. In slight insults, the animal may recover and in severe cases cloudy swelling is developed to fatty degeneration.
- *Fatty degeneration* is an irreversible process and occurs when fat accumulates in the damaged cell. This condition is associated with acute febrile and toxic conditions and with chemical poisoning by arsenic, phosphorus, chloroform etc. The liver and kidneys affected are a pale, clay-red colour and greasy on touch. They have a patchy or spotted appearance.

- *Fatty infiltration* is an accumulation of fat in the *heart, liver, kidneys, pancreas*, etc. The liver is yellow, soft in consistency, has round edges, is enlarged and has a greasy texture on cut surfaces. Fatty infiltration may disappear from the tissues if the causative agent is removed. The extensive accumulation of fat in the liver is caused by an increased dietary intake of fat, increased mobilization of fat during lactation or starvation. It is also seen in healthy animals often accompanies advanced pregnancy in cows and ewes.
- **Judgement:** Organs and muscles affected with cloudy swelling are *condemned*. Detailed examination of the carcass is necessary for fatty degeneration which systemic changes are usually present and the carcass is therefore *condemned*. A liver affected with fatty infiltration is *approved*.

Bruises

- Bruises are frequently found on antemortem and post-mortem examination in food producing animals and poultry. In cattle bruises caused by transportation or handling are commonly found in the hip, chest and shoulder areas; and in sheep in the hind leg. Bruises and haemorrhage in the hip joint are caused by rough handling of animals during shackling. Bruises in poultry can be localized or generalized and are frequently associated with bone fractures or ruptured ligament tendons.

Judgement :

- Bruised animals should be treated *as suspects* on ante mortem examination. On postmortem examination, carcasses affected with local bruising are *approved* after being trimmed. Carcasses affected with bruises or injuries associated with inflammatory lesions are also *approved* if tissue reaction *does not extend beyond the regional lymph nodes*. The affected area should be *condemned*. When bruises or injuries are associated with systemic change and the wholesomeness of the musculature is lost, the carcass will be *condemned*.

EXTENSIVE BRUISES OF A BEEF CARCASS.



THANK YOU